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Metatext: Computerized Materials for the Study of Shakespeare's Language

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INTRODUCTION

During the past decade Arthur H. King has compiled detailed sociostylistic materials focusing on the social and dramatic function of language in Shakespeare's plays. His approach views the Shakespeare text itself as a source of historical data; a careful application of sociolinguistic methods can make those data available for a full range of interpretive approaches.

In addition to his own work, he has drawn on the work of others studying Shakespeare's vocabulary, pronunciation, syntax, and metrics. This compilation, if easily accessible to researchers, teachers, actors and critics could significantly aid them in their work.

Since August 1988 we have been working on the prototype of MetaText, a new form of hypertext designed to allow the user to view multiple types of parallel data displayed automatically with the movement of the cursor through the Shakespearean text. Initial testing suggests that computer access to this large database is far superior to accessing it via the printed page.

This paper discusses Dr. King's approach to the study of Shakespeare's language, the categorization and preparation of the data and the various functions and capabilities of the MetaText software.

We welcome suggestions about the content and formatting of the material and about applications of the MetaText to other major texts in literature, philosophy, religion or other fields of study.

RESEARCH ON THE LANGUAGE OF SHAKESPEARE

Though there are a few standard reference books on the language of Shakespeare (such as Abbott's A Shakespearian Grammar, and Hussey's The Literary Language of Shakespeare), there is no encyclopedic work with language as its focus. Numerous studies of Shakespeare's language are published in dozens of periodicals, some serving the interests of linguists, others serving as a basis for critical interpretations. It is a huge task simply to sort through
all the articles containing references to Shakespeare's language. Many studies are restricted to one short passage, one aspect of style, or to one poem or play. Though these restrictions are defensible, this means that a few small segments of text have received intense scrutiny and very large segments have received little attention in the published body of work.

Stylistics is in a state of flux; stylisticians use methods and theories ranging from transformational grammar to traditional rhetoric to semiotics. Because stylistics or linguistic stylistics, or linguistic criticism are terms used to name diverse activities in which linguistic skill is used for textual analysis, it is necessary to state the premises underlying the stylistic approach to Shakespeare we've used.

HISTORICAL SOCIOSTYLISTICS

Dr. King's approach analyzes Shakespeare's use of language within the contextual norms of Shakespeare's time. This requires reference to historical linguistics, sociolinguistics, and contemporary linguistics. This method may be termed historical sociostylistics. The emphasis is on the social and dramatic function of the language in the specific context of a play.

Some stylistic work attempts to isolate a subset of language with definable characteristics that make it 'poetical,' or 'literary,' rather than 'ordinary' language. Many studies attempt to isolate the characteristics of an individual writer's 'style'.

This approach attempts neither. Instead it is expected that literary language will reflect the conventions of the society in which it was produced, and in the case of Shakespeare's drama, will reflect the language use of his day as mediated by contemporary social and literary conventions. It is also posited that there exists no set of language characteristics comprising a 'Shakespearean' style; rather, it is expected that Shakespeare used a variety of registers and styles which helped his audiences make social, and hence dramatic, sense of the roles on the stage.

Dr. King's approach analyzes virtually every word of a play in the context of usage across all of Shakespeare's works. In this way, his conclusions are based on the examination of a much larger corpus of material than the short poems, or short prose selections used for most stylistic study. His approach also considers more aspects of language than do most studies, which are limited, for example, to syntax, or to subsets of Shakespeare's vocabulary, or to the use of one rhetorical device. He looks for the cumulative effects of several aspects of language.
Dr. King uses the language data to assess sociostylistic norms, their ranges, and deviations from them. Such norms are not related to the development of a standard English, nor are they based primarily on the statistics of usage, but are inferred from usage in the social contexts represented in the plays.

To summarize, we've spent years gathering information relevant to understanding the social or literary norms for language use and have then used that information to explore, appreciate, and interpret the text.

MATERIALS FOR THE STUDY OF THE LANGUAGE OF SHAKESPEARE'S PLAYS

Because sociostylistic information can help us better understand the plain sense, register, organization, and tone of specific passages, this approach can be helpful in research and in teaching. Since 1975 four of Shakespeare's plays (King Lear, Hamlet, Othello, Macbeth) have been studied intensively; preliminary work has begun on an additional six (The Tempest, Coriolanus, Antony and Cleopatra, Twelfth Night, Measure for Measure, A Midsummer Night's Dream). This study has produced thousands of pages of data about Shakespeare's language in these plays. These data could be "mined" for a variety of instructional or research purposes.

Until now, the information compiled for this approach has consisted of books of notes about the language. Each play studied has been divided into passages 15-20 lines long; in each passage the lexis, syntax, patterns of repetition (rhetorical devices, sounds and meter) have been examined, and their cumulative effect within the passage assessed. The passage division generally corresponds to relevant language characteristics in the text; for example, the 20 lines may be a set speech by one role, or an interchange between two roles; frequently there is a shift of register or tone marking the break between passages. Usually each 20-line passage yields ten to fifteen pages of stylistic information.

PROTOTYPE DATABASE

For the MetaText prototype, we chose to work with Lear 1.1.1-120. Dr. King dictated new material, and we worked to derive a format from the new material that would also allow us to incorporate in the final MetaText program material generated previously. The challenge has been not only to produce and edit the material, but also to collect ancillary material supporting the analysis (or contradicting it), to standardize the format of the material, and to adjust both the program and the format to improve user access.

The MetaText prototype allows the user to choose the types of language information to be displayed, while screening out
the rest. In order for the user to decide what he does or does not want to see, we had to categorize the material. We have used the following codes and categories in the MetaText prototype:

<table>
<thead>
<tr>
<th>CODE</th>
<th>CATEGORY</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>Commentary</td>
<td>Interpretative comments on specific lines</td>
</tr>
<tr>
<td>CR</td>
<td>Cross Reference</td>
<td>Material from other works, other authors</td>
</tr>
<tr>
<td>DP</td>
<td>Dramatis Personae</td>
<td>Commentary on names of characters</td>
</tr>
<tr>
<td>IP</td>
<td>Interpretation</td>
<td>Mini-essays, interpretations based on language detail</td>
</tr>
<tr>
<td>LE</td>
<td>LExis</td>
<td>Information about words, phrases, usage; identification of lexical figures such as sense play, polyptoton</td>
</tr>
<tr>
<td>ME</td>
<td>MEter</td>
<td>Four-level scale: unstressed, light stress, normal stress, emphasis = word, phrase, sentence level stress mapped over traditional meter</td>
</tr>
<tr>
<td>RF</td>
<td>Rhetorical Figures</td>
<td>Selected traditional terms (anaphora, epistrophe, etc.) used; no trope/scheme division</td>
</tr>
<tr>
<td>SD</td>
<td>Stage Directions</td>
<td>Discussion of staging</td>
</tr>
<tr>
<td>SO</td>
<td>SSound</td>
<td>Phonemic/phonetic symbols unavailable for this version</td>
</tr>
<tr>
<td>SY</td>
<td>SYntax</td>
<td>Construction, register, figures (triads, antithesis, etc.) identified</td>
</tr>
</tbody>
</table>
These data can help the user evaluate register, style, conventions and tone; it may make some of his work in the OED and other reference books more efficient, or perhaps unnecessary. Entries are in standard format, and the final version of the program will allow access to any portion of the entry.

**METATEXT SOFTWARE**

Dr. King's language material has been used in classes and circulated at conferences for years; it has been criticized as too hard to understand. One reviewer said, "This looks like a book of footnotes; why don't you append some essays?" We've taken some of his advice. Since research questions motivate scholars to use reference works, we wanted a program which would show material from the categories relevant to the question, but "hide" the rest. We also wanted Dr. King to explain at various points his interpretation of the language detail.

Further, the program should be simple to use. Hypertext, in its most common format, frequently asks the user what it should do and which material it should display. Being asked a question while pursuing a train of thought is distracting, so we were dubious about using standard hypertext for this project.

We think that in many inquiries, more than one kind of language information will be immediately relevant (for example syntax and lexis could both be required in studying changes in usage), so the program must be able to display multiple categories simultaneously.

Word searching in the Shakespeare text, as well as in the language material itself must be a standard option to allow the user more scope in designing his own research strategy. Additional reference works should be included, and should also be searchable. The scholar should be able to make notes and extract textual material without leaving the program, so a word processing and printing function must be available.

With these requirements in mind, we surveyed existing software and found that nothing currently offered would adequately present Dr. King's work for electronic publication. Accordingly, the design for MetaText was drawn up and the prototype was constructed. In addition to the demonstration of the software at the DLLS conference in March 1989, the program and a sample selection of commentary...
on the first 120 lines of Lear were shown at the annual meeting of the Shakespeare Association of America in Austin, Texas in April 1989. Several scholars from other fields have also reviewed the prototype.

Their response has been generally favorable; several reviewers' suggestions have been incorporated to improve the human interface, making the program simpler to use. We've also discussed with reviewers which texts or subjects might be effectively published or presented for classwork via the MetaText software. Obviously the software has potential apart from the Shakespeare database.

METATEXT SCREEN AND FUNCTIONS

A copy of the MetaText screen is shown below in figure 1.

Fig. 1. The MetaText screen focuses attention on the Shakespeare text, while allowing the user to see the types of data available for display.

Name, Date, Time. The box across the top of the screen contains the MetaText name, the date and time of use. In future versions, the name of the play, act, scene and line number will also be listed.
Status Bar Display. The single line reverse video window which appears on the bottom line of the Name, Date, Time window displays the abbreviations of all categories of comment which are available at any character position. Comments may be assigned to any character, word, line or group of lines. At any time, the user can access the available language data by pressing the view key, then typing in the two-letter category code for a full screen window presentation of data in that category linked to the position of the cursor in the Shakespeare text.

Inquiry Text. The larger box beneath contains the text of Shakespeare's King Lear. The line numbering on the left is that of the Riverside edition of Shakespeare.

Cursor Bar. The bar across the middle of the text window is a reverse video presentation of the line of text selected by the user. The underline character shows the position of the cursor within the line. Pressing a cursor movement key moves the text behind the bar up or down rather than moving the bar itself. This means that the selected text will always appear in the middle of the screen, allowing the user to define fixed windows elsewhere so data can be shown without hiding the portion of text the data address.

Automatic Display of Data. The user chooses the type of language material to be automatically displayed, designs the size of the window, and positions it on the screen. When the user places the cursor at a point in the Inquiry text for which that category of material is available, relevant material is automatically displayed without further commands. Figure 2 (below) illustrates the automatic display of syntactic data.

The smaller text window at the upper right, overlaying the Shakespeare text, displays a portion of the syntactic data linked to the cursor position. The size of the window limits the amount of material that can be seen initially. For some entries, that space will be sufficient. When it is not, the user can press the view key, type in the the two-letter code to see the material displayed on the full screen.

Full cursor motion is possible within the large screen to facilitate the viewing of the data. When finished with the data in the full screen window, the <escape> key returns the user to the Shakespeare text.

Selecting and Positioning Windows for Automatic Display. Data windows will be automatically displayed only when selected by the user. By pressing the select key, she chooses from the list of categories those she wants displayed automatically. A box of default size and shape is
then presented; she can change the shape and position of the box(es) to suit her needs. Pressing the <enter> key returns her to the list of categories. Any combination or all of the categories may be selected for simultaneous automatic display.

After leaving the category selection menu via the <escape> key, the user sees automatically displayed in the windows data from the categories selected as she moves the cursor through the text.

At any time the user may adjust the shape or position of any window by pressing the display key and making the desired changes.

Word Processing. By pressing the w key, the user may enter the built-in word processor to make notes. The notes may then be filed in separate files, linked to text and automatically displayed in the user's comment window.

Searching. The final version will include full word searching capabilities allowing searches of the Shakespeare text, Dr. King's data, additional reference material and the
user's notes. Statistical information will be available with the searches.

Audiovisual Capacities. When the software is completed, audio and audiovisual material may also be linked to the text allowing readings or productions of Shakespeare to be accessed in the same way other comments are accessed in the prototype.

Updating the Database. Finally, the finished MetaText will allow comments to be made on comments for any number of levels. For example, if a scholar disagreed with Dr. King's assessment of more affected... than as a set phrase, we could incorporate that critique by linking it as a comment available from the full screen display of the syntax entry. We feel that access to Dr. King's material will encourage further language work by other scholars, and that some may want to contribute to this database as a form of electronic publishing.

Size of the Database. The only parameters restricting the size of the MetaText will be the storage and memory of the computer on which it is run. For Dr. King's Shakespeare MetaText, it is expected that a laser disk will be required to allow his approach, including relevant published articles and monographs as reference material, to be presented appropriately in an encyclopedic fashion. In an effort to keep the size of the database manageable, and because of the amount of work done on this author, we have restricted our work to Shakespeare's language.

In summary, the MetaText program allows a researcher to selectively view reference material about a given text. Once the windows for automatic display have been selected, shaped and positioned, the user's only input will be to move the cursor through the text, asking for full screen presentation of data when necessary. Such simplicity will allow him to think about his subject rather than the functioning of the program. We think the Shakespeare database presented via the MetaText program will provide a significant reference tool that could aid others in their research for years to come.
APPENDIX: STANDARD FORMAT OF DATA

CO (COMMENTARY)

Arthur H. King's commentary on the text re: pragmatics; tone, style, implication, juxtaposition, omission, etc.

1. Scope or item comment concerns [if it concerns a piece of text, the format is text from the play (line #)]
2. Comment

Terms likely to be used include:

Arcadianism  dramatic irony
brevity  Euphuism
colloquial  register
complement  Senecan
copy

CR (CROSS REFERENCE)

Long references are outlined so you can find the portion that interests you without scrolling through pages of text.

DP (DRAMATIC PERSONAE)

1. Character
2. Comment

IP (INTERPRETATION)

Interpretations are accessible via an outline. The form is:

Title
Mini-essay
Notes
LE (LEXIS)

Format: (some sections will be blank)

1. Word or words from the play (line #)
2. Label (e.g., neologism, normal register, etc.)
3. Definition (includes information from the OED, other reference books)
4. Citations format: <Speaker> [as in WordCruncher], quoted passage, (reference--OTH 3.4.12-15 [play name in all caps]), with each reference separated by semicolons
5. Basis for conclusion, statistics for usage, etc.

TERMS

<table>
<thead>
<tr>
<th>abstract for person</th>
<th>pathetic fallacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>affected</td>
<td>personification</td>
</tr>
<tr>
<td>archaism</td>
<td>poetic diction</td>
</tr>
<tr>
<td>dialect</td>
<td>polyptoton</td>
</tr>
<tr>
<td>epithetus ornans</td>
<td>pun</td>
</tr>
<tr>
<td>metonymy</td>
<td>sense play</td>
</tr>
<tr>
<td>neologism</td>
<td>soriasmus</td>
</tr>
<tr>
<td>nonce word</td>
<td>word chain</td>
</tr>
<tr>
<td>normal</td>
<td>word link</td>
</tr>
</tbody>
</table>

ME (METER) The four point scale: normal(/), light stress (\); unstressed (u) emphasis (//).

Format:

1. Line, Segment scanned.
2. Label (e.g., isocolon, trisyllabic pronunciation, etc.)
3. Explanation/Function/Examples

TERMS

| contrast stress       |...
| couplet               |...
| disyllabic pronunciation|...
| elision               |...
| emphatic stress       |...
| hypermetrical unstressed syllable|...
| inverted first foot   |...
| isocolon              |...
| light stress          |...
| phrase-level stress   |...
| sentence-level stress |...
| syllabic variation of /l/r/n/m/ |...
| trisyllabic pronunciation|...
| word-level stress     |...

.36
RF (RHETORICAL FIGURES)

Format:
1. Words (lines #-#)
2. Label
3. Function.

TERMS
anadiplosis
anaphora
antimetabole
chiasmus
climax
epanadiplosis

epanalepsis
epistrophe
epizeuxis
stichomythia
symplece
tmesis

SD (STAGE DIRECTIONS)
1. Text of stage direction
2. Comment

SO (SOUNDS)
Phonetic/phonemic symbols are not available for this version.

Format:
1. Words (lines #-#)
2. Label
3. Function
4. Similar examples
5. Comment/Effect

TERMS
alliteration, sequential alliteration, vocalic alliteration
antimetabolic sequences
assonance, sequential pairs, subassonance
binders, word-, phrase-, line-, passage-, dialogue-
consonance, sub-, super-, consonantal clusters
homoeoteleuton
line patterns
paromoeon
rime
sonance
SY (SYNTAX)

Format:
1. Range: text here . . . to here (lines #–#) or this text (line #)
2. Label
3. Paraphrase/sense
4. Citations: <speaker> quote,(reference) [same as LE]
5. Explanation

TERMS

absolute construction  interrogation
accumulation  inversion
anacoluthon  oxymoron
antithesis (antithetical)  parallelism
aposiopesis  parenthesis
asyndeton  parison
double negative  periodic sentence
elliptical construction  periphrasis/periphrastic
epanorthosis  periphrastic do
episodic sentence  prosiopesis
ethic dative  schesis onomatton
graphic present  sententia
historic present  stichomythia
hyperbaton  transferred modifier

VR (VARIANT READINGS)

1. F reading
2. Q reading
3. Comment
NOTES


2. The amount of stylistic information produced varies according to the text itself. Commonly occurring feature, such as variation in the use of thou and you, or use of -eth verb forms are not routinely listed, but are noted when their use is stylistically significant in the context. Language information that is generalizable, such as statements about the use of periphrastic do are made in a glossary of terms to be available by hot key in the MetaText program.


A user interested in only one constituent of the entry could choose to have only that portion displayed, making it easier to fit into the windows data relevant to the user's task, while screening out the rest of the entry.

4. Existing hypertext programs were reviewed, but proved inadequate to the needs of our project. Traditional hypertext is a method of linking a large variety of data types to each other for recall. Since any data object may be linked to any other, the database may be built up using the intuitive associations common to human thought rather than the rigid structures employed by computer scientists in business and record keeping databases.

To use a hypertext program, the user initially finds himself looking at a screen of text. Buried in the text are icons of some sort which are not textual symbols. These represent a link to other data in the database. By moving the cursor to the icon, the user obtains access to a menu of choices. Frequently there are links to more than one piece of data. By selecting the desired option from the menu, the user may view the data which has been associated with the primary text icon.
REFERENCES


